REMARKS/ARGUMENTS

The claims are unchanged.

Obviousness - 35 U.S.C. 103(a)

The Examiner has rejected claims 1, 3- 11, 14 and 16-22 under 35 U.S.C. 103(a) as being obvious having regard to the following, new combination of references:

(1) Probets No. 1 (http://www.eprg.org/research/SVG/flash2svg/);
(2) Probets No. 2 http://www.eprg.org/research/SVG/flash2svg/swfformat.php);
(3) Isaacs (U.S. Patent No. 5,894,308);
(4) W3C (http://www.w3.org/TR/SVGMobile/); and
(5) Kidokoro (U.S. Patent Pub. No. 2003/0103250).

The Applicant notes that the Noyle reference formerly relied upon by the Examiner has been replaced with the newly cited Kidokoro.

The Applicant maintains that the subject matter defined by the pending independent claims is not obvious in view of the cited references for the reasons set forth below.

Examiner's Response to Applicant's comments

At pages 14 and 15 of the Office Action, the Examiner provides his response to the Applicant's arguments in the previous reply. The Examiner's response relates to the meaning of the term "vector graphics" and the difference between a 3D object model and a vector graphics object.

The Examiner states that the Applicant has not provided, in definitive terms, a definition of the term "vector graphics". The Applicant described "vector graphics"

and "vector graphics object" in its replies of June 22 and October 26, 2007. A "definitive" definition was not given, at least in part, because it was believed that the meaning of these terms was understood. Additionally, the Applicant does not wish to be bound by any particular definition of the term "vector graphics" or "vector graphics object" made in reply, or any specific example of vector graphics" or "vector graphics object" given in reply, however the Applicant will expand briefly on the meaning of these terms. The examples described below, and any definitions provided, are not intended to be limiting for the purpose of limiting functional equivalents in accordance with the doctrine of equivalents. The examples and any definitions provided herein are for the purpose of explanation only. The terms used in the claims are to be interpreted in accordance with the meaning understood to a person of ordinary skill in the art as of the relevant date, not based any examples or definitions provided herein.

A vector graphics object is a graphics object defined by mathematical equations in terms of geometrical primitives such as points, lines, curves, and polygons. Example vector graphics formats are the claimed "edge record based format" and "path format". The claims describe these formats in more detail in function terms. Examples of two-dimensional (2D) vector graphics formats are the Scalable Vector Graphics (SVG) formats and SWF formats. As noted in the dependent claims, the SVG format is an example of the functionally described and claimed path format, and the SWF format is an example of the functionally described and claimed edge record based format.

Vector graphics images and objects can be contrasted with the use of vector graphics in 3D computer modelling. A 3D model is the mathematical representation of a three-dimensional object<u>; however a model is not a graphic until it is visually displayed as a 2D image</u>. While 3D computer graphics rely on many of the same algorithms as 2D computer vector graphics in the wire frame model, it relies on 2D raster graphics in the final rendered display (raster graphics are defined in terms of pixels). Thus, there is no such thing as 3D vector graphics file as the Examiner contends (there is a 3D object model file, but this is not considered a graphic file or

graphic object), nor is a 2D vector graphics file a simplified version of a 2D vector graphics file as suggested by the Examiner. While vector graphics may be used during 3D modelling for 3D games etc., outside a rendering or authoring environment, the resultant image is not defined by mathematical representation in terms of geometrical primitives and so is not a vector graphics object, but a raster graphics object. The Applicant provides copies of the Wikipedia entries for "vector graphics" and "3D computer graphics" for the Examiner's reference. However, as noted above, the contents of these documents are provided for explanation and the Examiner's convenience only. The claims are not intended to be limited by the content of the attached Wikipedia entries in any way.

In view of the above, references such as Isaacs and Kidokoro (described below) which relate to raster graphics are <u>not</u> analogous art and cannot be used to support a rejection under 35 U.S.C. 103(a). While this distinction alone is considered to be sufficient to address the rejection, the Applicant will provide further comments on the cited references to provide a complete reply.

<u>New rejection under 35 U.S.C. 103(a)</u>

The only new reference cited by the Examiner is Kidokoro, and the Applicant has already provided detailed comments on the remainder of the cited references. Accordingly, the Applicant will primarily address Kidokoro in this reply, however the Applicant notes that it still maintains that Isaacs does not teach:

> redefining the polygon shapes <u>defined by the path elements</u> as groups of triangles; and
>
> combining at least some triangles in the groups of triangles into further polygon shapes <u>that fall within complexity thresholds</u>.

Isaacs describes triangulating polygons (i.e., dividing a polygon into a series of triangles) of a 3D object model (see, for example, col. 4, lines 38-45) and combining some triangles into further polygon shapes. However, the polygon shapes which are

redefined in Isaacs are not defined by ... path elements as required by the claims (as noted above, this is an element of a vector graphics data in the path format, a specific type of vector graphics format an example of which is SVG - Isaacs is directed to 3D modelling for 3D computer graphics rather than vector graphics). Given that Isaacs relates to the 3D modelling rather than vector graphics conversion, it cannot teach this feature.

In addition, Isaacs does not combine some of the triangles based on complexity thresholds as required by the claims. In Isaacs, a user uses a slider in the GUI of the authoring environment to reduce the level of detail in a 3D object model through the removal of smaller polygons expected to be less visible from a distance. The 3D authoring environment may reduce the polygon count using a "length technique" in accordance with user input via the slider. On this basis, the Examiner equates "user input" with "length attribute", and "length attribute" with "complexity thresholds". There is no basis for equating these terms with the term "complexity thresholds" in the claims. It is only with hindsight, which is improper, that the features of "user input" with "length attribute" can be equated with term "complexity thresholds" in the claims. If the Examiner contends otherwise, he is requested to provide a detailed explanation as to why these terms are functionally equivalent.

The Examiner also states that W3C teaches "transmitting the converted vector graphics object in the second format to the wireless device over the wireless communications network for display thereon". While transmitting graphics data to a wireless device for display thereon is not new, and transmitting a vector graphics image in the path format (e.g. SVG) may be disclosed in W3C, the operation of transmitting the "optimized" vector graphics object in the second format (i.e., which results from the second converting step) is not described in W3C, and cannot be described in W3C, since a vector graphics object in the second format is not described in W3C.

Kidokoro

The Office Action was issued following the United States Supreme Court's decision in the case of KSR International Co. v. Teleflex Inc. (KSR), No. 04-1350 (April 30, 2007). As noted in MPEP at section 2143, the Court identified a number of rationales to support a conclusion of obviousness which are consistent with the proper "functional approach" to the determination of obviousness as laid down in Graham. The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. In light of the KSR decision, the Applicant wishes to address various issues pertaining to a proper analysis under section 103.

The Examiner, by citing references and asserting a reason for combining elements from the references, has elected to base rejection upon a teaching, suggestion or motivation to select and combine features from the cited references. The Applicant wishes to point out that the Supreme Court's KSR decision did not reject use of a "teaching, suggestion or motivation" analysis as part of an obviousness analysis, characterizing the analysis as "a helpful insight." KSR slip op. at 14-15.

When the Examiner chooses to base a rejection upon a teaching, suggestion or motivation analysis, the Examiner must satisfy the requirements of such an analysis. In particular, the Examiner must demonstrate with evidence and reasoned argument that there was a teaching, suggestion or motivation to select and combine features from the cited references: In re Lee, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002). Moreover, the prior art must suggest the desirability of the combination, not merely the feasibility: In re Fulton, 73 USPQ2d 1141, 1145 (Fed. Cir. 2004).

Although the Supreme Court did not reject use of a "teaching, suggestion or motivation" analysis, the Supreme Court did say that it was not the only possible analysis of an obviousness question. Because of the Examiner's chosen ground for rejection, however, the only pending ground for rejection must be a "teaching,

suggestion or motivation" analysis. In the event that the Examiner chooses to consider a different avenue for rejection, this would be a new ground for rejection not due to any action by the Applicant.

The Examiner states that Kidokoro teaches "performing image processing according to determined capabilities of the client terminal and transferring the image data". From this, the Examiner appears to suggest that it would be obvious to a person skilled in the art to use complexity thresholds based on predetermined capabilities of the wireless device in view of the combined teachings of Probets (1) and (2), Isaacs, W3C and Kidokoro.

While the features of determining the capabilities of a client terminal, and performing image processing according to the determined capabilities of the client terminal are disclosed in Kidokoro, the claimed complexity thresholds are based on predetermined capabilities of a wireless device. Thus, in the claimed invention the graphics converter need not determine the capabilities of a client terminal (wireless device), but rather uses predetermined capabilities of a wireless device known to or accessible by the graphics converter. Thus, Kidokoro does not describe or teach the claimed feature, nor has the Examiner provided any teaching, suggestion or motivation for using predetermined capabilities of the client terminal. Moreover, there is no suggestion or motivation in the cited references and the Examiner has provided no reason why device capabilities would be used as the basis for complexity thresholds for combining some triangles in the groups of triangles. Thus, there is no suggestion or motivation for the claimed combination.

For the reasons set forth below, the modifications to Isaacs and Kidokoro proposed by the Examiner to arrive at the claimed invention would also render the prior art unsatisfactory for its intended purpose, and would change the principle of operation of the references (see MPEP 2143.01 *In re Gordon,* 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984); *In re Ratti,* 270 F.2d 810, 123 USPQ 349 (CCPA 1959). Thus, the teachings of Isaacs and Kidokoro are not sufficient to render the claims *prima facie* obvious as stated in MPEP section 2143.01.

As with Isaacs, Kidokoro deals with raster images (e.g. scanned images of documents) defined in terms of pixels whereas the claimed invention relates to vector graphics objects (e.g. SVG and SWF) defined in terms of polygons or other vector shapes. Due to the different image processing requirements of these different image types, Isaacs and Kidokoro are <u>not</u> analogous art and cannot be used to support a rejection under 35 U.S.C. 103(a). Additionally, there are technical differences which do not allow the teachings of Kidokoro to be applied in the context of the claimed invention without rendering the prior art unsatisfactory for its intended purpose or changing its principle of operation.

Kidokoro's invention is limited to a Local Area Network (LAN) scenario whereas the claimed invention is directed to wireless devices typically on a wireless Wide Area Network (wireless WAN) such as a cellular data network. On a LAN there may be hundreds or thousands of clients making requests for content but in a wireless context there may be millions or tens of millions of clients making requests. While Kidokoro mentions the network may be a "radio LAN...such as Bluetooth", he does not indicate how his teachings could be applied in such an environment. Additionally, the named wireless network (Bluetooth) is a short-range wireless network (also known as a personal area network) which is typically used to connect peripheral devices to a computer or smartphone over a short distance. To the Applicant's knowledge the Bluetooth protocol has not, and likely cannot, be implemented in a LAN architecture due to the very short range of such connections (typically about 10 feet). Accordingly, Kidokoro does not teach how to implement his imaging processing invention outside of a wired LAN environment.

Fundamental to Kidokoro's invention is that the image processing step which takes the device capabilities into consideration is operating on the whole source image at a high quality or "full-quality" resolution. Kidokoro describes either obtaining the full, high quality image from a document scanner (see paragraph [0044] at page 3) and storing it in memory of the image reading apparatus, or reading an "original scan" (which appears to mean a previously scanned image) from

the memory of a file server 63 (see paragraph [0063] at page 4). Thus, in either embodiment Kidokoro is down-sampling from a full, high quality image in raster graphics format. Once the image is stored temporarily, or after reading the scanned image data, the device capabilities of the client terminal are sent to the image reading apparatus which then modifies the scanned image to suit the device capabilities, and sends the modified (reduced quality) image to the client terminal.

In contrast to Kidokoro, the claimed invention does not need to create or store a full copy of either the source edge-based image (the vector graphics object in the edge record format) or the polygon-based representation which it is converted into (the vector graphics object in the path format). In the claimed invention, the source edge-based image is converted to a polygon-based representation, and the polygon-based representation is converted to an optimized (efficient) form using predetermined device capabilities without the need to maintain a full copy of the source image or a full copy of an intermediate representation. This is possible because the method and system of the invention can process each vector graphics object (e.g. each polygon or vector shape) in the image individually. This feature appears in the claims in that the processing operates on vector graphics <u>objects</u> (e.g. polygons or vector shapes) rather than image documents or files, etc. It does not matter whether the original source image contains one vector shape or one thousand. This also means that the system does not need to maintain a copy of the entire source image, or create and store a full intermediate or final representation of the converted image.

The graphics converter of the present invention is typically connected to or part of a mobile data server which either has information about the wireless device and its capabilities, or can access this information without the need to obtain information from the wireless device itself (although it could if so desired). Thus, unlike Kidokoro there is no need to store a copy of the source image while the device capabilities are determined as in Kidokoro (this step is not required in the present invention). Moreover, because the source image is a vector graphics image, processing may be based on discrete vector graphics objects (e.g. polygons) defined in the image (such

objects being defined by mathematical equations referred to as edge records in the edge record based format, and path elements in the path format). This is not possible in Kidokoro because it operates on a raster graphics image which is defined in terms of pixels (there is no easy mechanism to down-sample such an image in parts).

In wireless deployment environments such as the claimed invention where the graphics converter may deal with a very large number of client requests for image data (possibly millions or tens of millions), maintaining full quality interim results (such as the scanned image in Kidokoro) on the mobile data server or graphics converter could exceed the device's storage capacity very quickly. In contrast, in the claimed invention processing can occur on an input stream of data (i.e. the source edge-based image) from a remote source (remote relative to at least the mobile data server or graphics converter) using known device capabilities and without the need to store a full copy of the source edge-based image or polygon-based intermediate representation (path format representation). Rather, the claimed invention processes client requests in a manner analogous to streaming in which a full data set never needs to be stored in its entirety.

In sum, Kidokoro is like Isaacs in that it is directed to raster graphics rather than vector graphics, and the part of Kidokoro's invention that makes use of the device capabilities requires as input a full, high quality image to be stored while it determines the device capabilities for use in the conversion process. The full source image is the converted and transmitted. Given these differences, for the reasons explained above, Kidokoro's method of using device capabilities to convert source images would not work in a wireless deployment environment such as the claimed invention. Modification the teachings of Kidokoro for a wireless delivery of converted vector graphics objects in the manner claimed and as described above would render it unsatisfactory for down-sampling scanned documents and transmitting such documents to client terminals as such documents cannot be processed in terms of individual image objects. Additionally, such a modification would change the principle of operation of Kidokoro. Thus, there is no teaching or suggestion in Kidokoro or the other cited references which would lead a person of ordinary skill in the art to adapt

the method of Kidokoro for use in the conversion and wireless delivery of vector graphics objects on a large scale.

In view of the foregoing, it is respectfully submitted that the cited references fail to teach or suggest all of the claimed elements. Thus, pending independent claims 1, 11, 14, and 17 are patentable over the cited references. Claims 3-10, 16 and 19-22 depend, directly or indirectly, from claim 1, 11, 14 or 17 and are patentable for at least the same reasons.

In view of the foregoing remarks and submissions, the Applicant respectfully requests reconsideration and submits that the present application is in condition for allowance. Should the Examiner have any questions in connection with the Applicant's submissions, please contact the undersigned.

Respectfully Submitted,
RESEARCH IN MOTION LIMITED

By /SM/

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